COMPARING HOSPITAL NEW EMPLOYEE SAFETY ORIENTATION AND HEPATITIS B VACCINATION PROGRAMS TO THE PROPOSED STANDARD FOR OCCUPATIONAL EXPOSURE TO BLOODBORNE PATHOGENS

By

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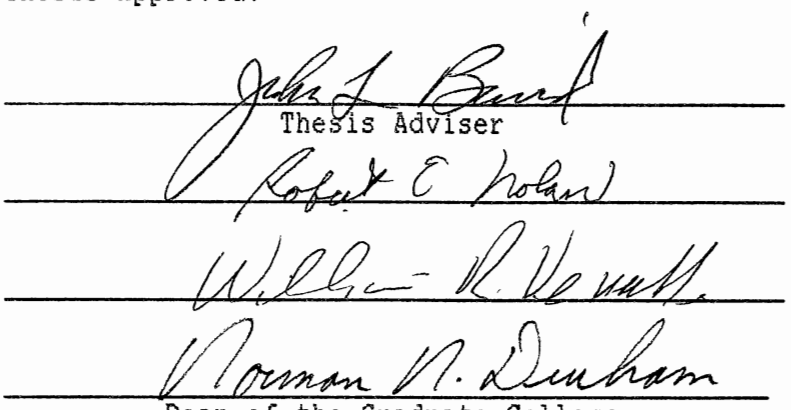

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CHAPTER I

INTRODUCTION

The Occupational Safety and Health Administration (OSHA) has promulgated the proposed rule and notice of hearings for Occupational Exposure to Bloodborne Pathogens in the May 30, 1989, Federal Register. The proposed standard is OSHA's first regulatory action to address biological hazards in the workplace and is significant because it places OSHA in an area traditionally regulated by the Public Health Service (PHS). OSHA has identified certain workers that are at increased risk because of occupational exposure to blood and other potentially infectious materials to contact Hepatitis B Virus (HBV), Human Immunodeficiency Virus (HIV) or other bloodborne pathogens. OSHA concluded that significant health risk could be minimized or eliminated using a combination of engineering and work practice controls, personal protective clothing and equipment, training, medical follow-up of exposure incidents, vaccination (where applicable), and other provisions.

Need for Study

The Occupational Safety and Health Act was passed by Congress in 1970 ". . . to assure so far as possible every working man and woman in the Nation safe and healthful working conditions. . ." (p. 995). One of OSHA's primary goals is to develop mandatory job safety and health

standards and enforce them effectively. Blood and other potentially infectious materials are the spawning sites for bloodborne pathogens. These latent infectious materials can be found in workplaces in every state of the union. The occupational hazard they create is a national problem. OSHA's proposed bloodborne pathogen standard was written to protect employees in every state using general performance-oriented standards.

Statement of the Problem

OSHA promulgated the proposed "Occupational Exposure to Bloodborne Pathogens Standard" in the May 30, 1989 Federal Register. Present new employee safety orientation practices vary among healthcare institutions. There is need to determine the current status so that appropriate changes in programs and training can be planned.

Purpose of the Study

The purpose of the study was to survey nine hospitals in Oklahoma to determine how closely new employee safety orientation and hepatitis B vaccination programs met the proposed OSHA guidelines for Occupational Exposure to Bloodborne Pathogens.

Objectives of the Study

The objectives of the study were:

1. To assess new employee safety orientation and hepatitis B vaccination programs among nine hospitals using a standard measurement tool.

2. To compare current hospital new employee safety orientation and

hepatitis B vaccination programs to guidelines from the proposed Occupational Exposure to Bloodborne Pathogens Standard.

3. To determine to what extent new moderate to high risk hospital employees are informed of hepatitis B vaccine availability.

4. To determine if the size of the institution is related to implementation of new employee safety orientation and hepatitis B vaccination programs.

Assumptions

For the purpose of this study, the following assumptions were accepted.

1. That the individual contacted at each hospital would be appropriately informed on their institution's policies and practices for bloodborne pathogens.

2. That the responses obtained would accurately represent the surveyed institution's policies and practices.

Scope and Limitations

This study contained the following limitations.

1. Purposive sample from the 1989 Oklahoma Hospital Association Directory. The data may not necessarily be representative of other hospitals.

2. The study was conducted at three large, three medium, and three small hospitals in Oklahoma.

3. The medium and small hospitals were financially independent of a larger hospital or corporate system.

4. Uncontrollable variables may have had an effect on the result.

Definitions

The following definitions are furnished to provide a clearer understanding of this study.

Acquired Immune Deficiency Syndrome (AIDS): An immunodeficiency syndrome caused by the human immunodeficiency virus (HIV). The virus permits opportunistic infections, malignancies, and neurologic disease (Taber, 1989, p. 53).

Attenuated: To reduce the virulence of a pathogenic microorganism. This may be accomplished with bacteria and viruses by heating, drying, treating with chemicals, passing through another organism, or culturing under unfavorable conditions (Taber, 1989, p. 162).

Body Substance Isolation (BSI): This system incorporates universal precautions as recommended by the CDC into a broad institutional system for control precautions. The body substance isolation is intended not only to prevent the transmission of bloodborne pathogens in the health care setting but also to prevent transmission of non-bloodborne pathogens, as well to reduce the risk of nosocomial transmission of pathogens from patient to patient (Pugliese, 1989, p. 18).

Centers for Disease Control (CDC): Division of the United States Public Health Service, in Atlanta, Georgia, for investigation and control of various diseases, especially those that have epidemic potential (Taber, 1989, p. 320).

Chromosome: "A linear thread in the nucleus of a cell. It contains the DNA, which transmits the genetic information" (Taber, 1989, p. 355).

Deoxyribonucleic Acid (DNA): A nucleic acid that on hydrolysis yields adenine, guanine, cytosine, thymine, deoxyribose, and phosphoric acid; it is the carrier of genetic information for all organisms except RNA viruses (Hopp, 1989, p. 276).

Disease: A pathological condition of the body that presents a group of clinical signs and symptoms and laboratory findings peculiar to it and that sets the condition apart as an abnormal entity differing from other normal or pathological body states (Taber, 1989, p. 513).

Genome: "The complete set of hereditary factors contained in the haploid set of chromosomes" (Hopp, 1989, p. 277).

Hepatitis: Inflammation of the liver. It may be caused by a variety of agents, including viral infections, bacterial invasion, and physical or chemical agents (Taber, 1989, p. 817).

Hepatitis B Virus (HBV): "Hepatitis caused by hepatitis B virus" (Taber, 1989, p. 817).

Human Immunodeficiency Virus - Type I (HIV I): The AIDS virus (Taber, 1989, p. 844). The HIV I was initially named either lymphadenopathy-associated virus or human T lymphocyte virus-III [LAV/HTLV-III] (Taber, 1989, p. 54). For this study it may also be referred to as 'HIV'.

Infection: The state or condition in which the body or a part of it is invaded by a pathogenic agent (microorganism or virus) that, under favorable conditions, multiplies and produces injurious effects (Taber, 1989, p. 908).

Moderate To High Risk Employee: Employees exposed (to bloodborne pathogens) an average of one or more times per month (Department of Labor, Occupational Safety and Health Administration, Occupational Exposure to Bloodborne Pathogens; Proposed Rule and Notice of Hearings, 1989, p. 23044).

Nosocomial Infection: "Infection acquired in a hospital" (Taber, 1989, p. 1223).

Occupational Exposure: Reasonably anticipated skin, eye mucous membrane, parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties (Occupational Exposure to Bloodborne Pathogens; Proposed Rule and Notice of Hearing, 1989, p. 23111).

Occupational Exposure To Bloodborne Pathogens Standard: The promulgated [May 30, 1989] proposed standard from OSHA for all employees identified as having a significantly increased risk for exposure to bloodborne pathogens. For the purpose of this study it may also be referred to as 'bloodborne pathogens standard' (Occupational Exposure to Bloodborne Pathogens; Proposed Rule and Notice of Hearing, 1989, p. 23043).

Occupational Safety And Health Administration (OSHA): A United States governmental regulatory agency that is concerned with the health and safety of workers (Taber, 1989, p. 1274). Established from The Occupational Safety and Health Act of 1970. Administration and enforcement is shared by the Department of Labor (DOL) and the Department of Health and Human Services (HHS). The Secretary of Labor is charged with the establishment

> and enforcement of safety and health standards, including conducting inspections and issuing citations, while educational functions, research, and training are performed by HHS (Branzelle, 1988, p. 32).

> Opportunistic Infection: Infection with any organism, but especially fungi and bacteria, that occur due to the opportunity afforded by the altered physiological state of the host (Taber, 1989, p. 1261).

> Parenteral: Exposure occurring as a result of piercing the skin barrier [e.g. subcutaneous, intramusclar, intravenous routes] (Department of Labor, Occupational Safety and Health Administration, Occupational Exposure to Bloodborne Pathogens; Proposed Rule and Notice of Hearing, 1989, p. 23135).

Pathogen: "A microorganism or substance capable of producing a disease" (Taber, 1989, p. 1339).

Promulgate: "To publish or make known officially; to make known the terms of a new or proposed law or statute" (Guralnik, 1972, p. 1137).

Retrovirus: "A class of viruses that contain the genetic material RNA and that have the capability to copy this RNA into DNA inside an infected cell. The HIV is a retrovirus" (Hopp, 1989, p. 280).

Ribonucleic Acid (RNA): "A nucleic acid that controls protein synthesis in all living cells, and takes the place of DNA in certain viruses" (Taber, 1989, p. 1608).

> Universal Precautions: All patients should be assumed to be infectious for HIV and other bloodborne pathogens. Universal precautions should be followed when workers are exposed to blood and certain other body fluids, or any body fluid visibly contaminated with blood (Centers for Disease Control, 1989; 38 [no. S-6], p. 9).

Vaccination: "Inoculation with any vaccine to establish resistance to a specific infectious disease" (Taber, 1989, p. 1963).

> Vaccine: A suspension of infectious agents or some part of them, given for the purpose of establishing resistance to an infectious disease. Vaccines are of four general classes: (1.) Those containing living attenuated infectious organisms. Example: Vaccine for poliomyelitis. (2.) Those containing

infectious agents killed by physical or chemical means. Example: vaccines used to protect human beings against typhoid fever, rabies, and whooping cough. (3.) Those containing soluble toxins of microorganisms, sometimes used as such, but generally forming toxiods. Example: toxiod used in the prevention of diphtheria and tetanus. (4.) Those containing substances extracted from infectious agents. Example: capsular polysaccharides extracted from pneumococci (Taber, 1989, p. 1963).

Virulence: "Relative power and degree of pathogenicity possessed by organisms to produce disease" (Taber, 1989, p. 1996).

Virus: A minute organism not visible with ordinary light microscope. It is parasitic in that it is entirely dependent on nutrients inside cells for its metabolic and reproductive needs. Viruses can be seen by using a electron microscopy (Taber, 1989, p. 1996).

Organization of the Study

Chapter I introduced the study with a brief review of development of the proposed bloodborne pathogen standard and then presented the need for the study and a statement of the problem. The first chapter also included the purpose and objectives of the study, assumptions, scope and limitations, and definitions of terms. Chapter II reviews the literature pertinent to the study: consequences of hepatitis B and HIV infections, historical events leading to the promulgation of the proposed Occupational Exposure to Bloodborne Pathogens Standard. Other literature areas reviewed were, methodology, procedure, and limitations. Chapter III identifies the methods and procedures used in this study. Selection of subjects, development of instrument, collection of the data, and analysis of data were included. Chapter IV presents the findings of the study. Chapter V contains a summary, findings, conclusion, recommendations for practice, and recommendations for further research on the proposed bloodborne pathogens standard.

CHAPTER II

REVIEW OF LITERATURE

This chapter presented a review of literature pertinent to this study. The identified literature areas were: (1) consequences of hepatitis B and HIV infections, (2) historical events leading to the promulgation of the proposed Occupational Exposure to Bloodborne Pathogens Standard, and (3) the methodology used.

Consequences of Hepatitis B and HIV Infections

The bloodborne pathogens included in the standard have been documented as posing a significant health risk for individuals that come into contact with them. Hepatitis B virus, the primary concern, is known to cause acute and chronic hepatitis. Hepatitis B virus invades and replicates in liver cells. Destruction of the infected cells often leads to clinically apparent acute hepatitis.

Two types of responses are seen for hepatitis B infections. An acute self-limited response or development of a chronic carrier. One third of acute infected individuals have no symptoms. The second acute third experience a mild flu-like illness which is not diagnosed as hepatitis. The remaining acute third exhibit severe symptoms that may include dark urine, yellowing of the skin and eyes (jaundice), extreme fatigue, lack of appetite, abdominal pain, nausea, and fever. The proposed Occupational Exposure to Bloodborne Pathogens Standard noted

that fulminant hepatitis, 85 percent fatal, occurred in one to two percent of acute hepatitis B cases, an estimated one per 1000 HBV infections.

Six to 10 percent of newly infected adults can not eliminate the hepatitis B virus from their liver cells. These individuals become chronic carriers for the hepatitis B virus. They usually continue to secrete or shed hepatitis B virus antigen for life. They fail to develop Hepatitis B antibody, the marker that indicates the body is recovering from the disease. These individuals represent a pool from which the disease may spread (Department of Labor, Occupational Safety and Health Administration, Proposed Occupational Exposure to Bloodborne Pathogens Standard, 1989, p. 23067).

Hepatitis B carriers have a 25 percent increased risk for developing chronic persistent hepatitis or chronic active hepatitis. Chronic active hepatitis often leads to cirrhosis of the liver after five to 10 years. Chronic HBV has been estimated to cause 10 percent of the 25000 - 30000 deaths each year attributed to cirrhosis of the liver. The changes that take place in the liver cells due to the virus may lead to malignant transformations and the development of primary hepatocellular carcinoma (PHC). Patients diagnoses with PHC usually die within four to six months after diagnosis. PHC usually develops in HBV carriers after a latency period of 20 - 60 years (Department of Labor, Occupational Safety and Health Administration, Proposed Occupational Exposure to Bloodborne Pathogens Standard, 1989, p. 23049).

Twelve thousand health care workers are annually reported to the CDC for occupational exposure to HBV. Sandler, Harwood, Thurber, Infante, noted in their report that OSHA had documented in the November

27, 1987 Federal Register "of these (12,000 cases), an estimated 3,000 are clinically recognizable infections, 600 require hospitization, and more than 200 die each year from acute and chronic effects of the disease (pp. 45438-45441)." The worker's compensation claims resulting from exposure and infection are high.

HIV is the other main pathogen addressed in the proposed Occupational Exposure to Bloodborne Pathogens Standard. Resistance to HIV infection is dependent on the anatomic integrity of intact skin and mucosa. Two common modes of exposure occur in healthcare workers. An employee's mucous membranes, open wounds, or broken skin comes into contact with infected blood or they experience parenteral exposure to infected blood. Risks associated with these incidents are reduced when barriers are available and correctly used. HIV infections occur when the virus gains entry into the blood stream of a susceptible human host. HIV has the capability of selectively infecting and ultimately incapacitating the immune system whose function is to protect the body against such invaders (Pugliese, 1989). HIV infection allows AIDS to develop. At the submission date for this study there was no known cure for HIV infection or AIDS.

HIV attaches to specific host receptor sites located on white blood cells called T-helper lymphocytes. Hopp (1989, p. 27) cited Weber and Weiss' report "HIV infection: The clinical picture "evidence suggests that the HIV enters by fusing directly with the host cells membrane".

HIV is a member of the retrovirus family. Retroviruses genetic information is encoded in ribonucleic acid (RNA). Deoxyribonucleic acid (DNA) is found in the chromosomes of the nuclei of all cells. It is the carrier of genetic information except for RNA viruses. In order for

the HIV to infect a host cell the RNA must be converted to a DNA copy.

> The copying enzyme, called reverse transcriptase because it transcribes in a reverse fashion, takes an RNA genome and makes a complementary DNA strand. This DNA strand then acts as a template for its proper DNA complement, and a double stranded DNA is formed. This newly formed viral DNA, indistinguishable from the host's DNA, may incorporate into the host DNA and become a permanent part of the host's cell genetic material (Hopp, 1989, p. 24).

Historical Events

OSHA applied existing regulations to protect workers exposed to bloodborne pathogens prior to implementation of the proposed standard. The Code of Federal Regulations (CFR), 29 CRF 1910.132 required personal protective equipment to be provided by employers. The General Duty Clause of the 1970 Occupational Safety and Health Act (OSH Act) section 5(a)(1) stated:

> Each employer shall furnish to each of his employees employment and a place of employment which is free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees (OSHA Act, 1970, p. 995).

This statement was one of many referred to, authorizing government work place inspections.

Merck, Sharp, and Dohme, licensed and released a plasma-derived hepatitis B vaccine, Heptavax-B, in June of 1982. The acceptance and use of the vaccine was less than anticipated partial due to the growing reports linking AIDS to contaminated blood products. The plasma used to produce the vaccine was obtained from individuals shown to have a high incidence of AIDS. The fear of contracting AIDS from the vaccine contributed to many individuals decision to forgo vaccination.

During 1983, OSHA issued a set of voluntary guidelines describing safe work practices that would reduce occupational exposure to

bloodborne pathogens. Recommendations to use HBV vaccine and post exposure hepatitis B immune globulins (HBIG) were included. These two treatments were shown to prevent or lessen complications from HBV infections.

The 1984 National Forum on Hepatitis B Control presented epidemiological data refuting hepatitis B vaccination for risk of transmitting AIDS. Donald P. Francis, M.D., D.Sc. Assistant Director, Division of Viral Diseases of CDC presented the findings of three types of tests conducted to detect the AIDS virus (in 1984 it was identified as HTLV-III or LAV) in the plasma-derived hepatitis B vaccine. The tests results and continued health of over 700,000 vaccine recipients in the United States were noted to alleviate concerns related to the safety of the vaccine.

In 1986, Recombivax HB, Merck, Sharp, and Dohme, a recombinant yeast derived hepatitis B vaccine was licensed. The vaccine was produced by Saccharomyces cerevisiae (common baker's yeast) into which a plasmid containing the gene for the hepatitis B surface antigen (HBsAg) subtype adw has been inserted (Annals of Internal Medicine, 1987, p. 354). This new vaccine was not associated with human blood or blood products.

The Centers for Disease Control used unpublished data in "Update on Hepatitis B Prevention", Annals of Internal Medicine, to note their findings on development and implementation for hepatitis B vaccine programs for health care workers.

> In 1985, between 49% and 68% of hospitals had established hepatitis B vaccine programs and the number increased steadily each year. Large hospitals (> 500 beds) were most likely to establish programs (90%). However, by June 1985, 60% of hospitals with than 100 beds also had begun vaccination programs. In 75% of the programs, vaccination was recommended

> for high-risk health-care workers (as defined by the hospital), and, in 77%, the hospital paid for these vaccinations.
>
> In spite of these programs, the actual use of vaccine in high-risk health-care professions has been modest. One state wide survey showed that, in hospitals with HB vaccine programs, only 36% of persons at high risk had actually received vaccine (CDC, 1987,p. 353).

During the last ten years reported hepatitis b infections have steadily increased. "Hepatitis B is the most commonly reported type of hepatitis in the United States" (Annals of Internal Medicine, 1987, p. 354). CDC received reports for 15,000 hepatitis B cases in 1978. An incidence rate of 6.9/100,000 individuals. CDC then estimated that there were approximately 200,000 cases of hepatitis B and that 50,000 of these had clinically confirmed cases. In 1981 the incidence rate had risen 33 percent, to 9.2/100,000. Reported cases of hepatitis B increased to 11.5/100,000 by 1985. The estimated number of hepatitis B cases in 1987 was over 300,000. This rising number of hepatitis B cases increases the chances that a healthcare worker will come in contact with it.

The American Federation of State, County, and Municipal Employees (AFSCME) appealed to OSHA to reduce the risk to employees from certain infectious agents on September 19, 1986. An emergency temporary standard (ETS) under section 6(c) of the OSHA Act was requested. Hepatitis B vaccine free of charge to at risk employees was requested under section 6(b). Three days later, the Service Employees International Union, the National Union of Hospital and Healthcare Employees and the RWDSU Local 1199-Drug, Hospital, and Healthcare Union urged OSHA to promulgate a standard to protect healthcare employees from the hazard posed by occupational exposure to HBV. They requested for

the minimum standard to contain all of the provisions in OSHA's 1983 HBV guidelines with emphasis for the workers on the benefits of vaccination. OSHA reviewed the data. In a letter, October 22, 1987, Assistant Secretary John A. Pendergrass denied the measures for an ETS on the basis that the criteria had not been met. OSHA stated that the proper plan would be to publish an Advanced Notice of Proposed Rulemaking (ANRP) to begin rulemaking under section 6(b) of the OSHA Act and to collect additional information for a standard.

The first step OSHA used to develop a standard was to implement an inspection program for health care sites to enforce the existing standards. This program began August, 1987. One of the inspection standards was the use of appropriate personal protective equipment. Next, the Departments of Labor and Health and Human Services published a Joint Advisory Notice "Protection Against Occupational Exposure to Hepatitis B Virus (HBV) and Human Immunodeficiency Virus (HIV)" in the Federal Register (52 FR 4181). This notice with a cover letter from Secretaries Brock and Bowen and a OSHA authored pamphlet were mailed to over 600,000 professional and trade associations, employers, and employee representatives. The purpose was to ensure that employers and employees were aware of recommendations to reducing occupational exposure to bloodborne pathogens.

The third step was publication of an Advanced Notice for Proposed Rulemaking (ANRP) that appeared in the November 27, 1987 Federal Register (52 FR 45438). The publication of this document began the rulemaking under section 6(b) of the OSHA Act and requested public comments for reducing occupational exposure to HBV and HIV. Specific information was solicited for the scope of the standard. Some of the

examples were:

> who should be covered, the modes of controlling exposure to bloodborne pathogens, the type of personal protective equipment that should be used and under what circumstances, the type of vaccination programs that should be used and under what circumstances, the type of vaccine that should be employed, the management of needlestick/splash/cut injuries, medical surveillance, if any, that should be conducted, the type of training and education programs that might be necessary, generic standards that might be adopted, advances in hazard control, the effectiveness of alternative approaches, and the environmental effects that may result from promulgation of such a standard (Sandler, Harwood, Thurber, Infante, 1989, pp. 88,89).

A 60 day period (ending January 26, 1988) for comments was allotted. Over 350 comments were received. Approximately one-half came from hospitals and other health care institutions, one-fourth were from professional organizations and their members, and the remaining fourth were from concerned individuals, unions, manufactures, and government entities. A sensible and workable proposed standard was possible with this response rate. The consensus of the responses revealed methods to reduce bloodborne pathogens exposure and prevention of related diseases available and feasible to implement.

OSHA proceeded with promulgation of the proposed rule in the May 30, 1989 Federal Register (29 CFR Part 1910).

Methodology

The desired end product obtained from education research influences the design selection. Education research is divided into the experimental and nonexperimental forms.

> Experimental research assumes that the researcher can manipulate the variables of interest - that there is a great deal of control over the research situation. Experimental research is also characterized by its major intent: to investigate cause-and-effect relationships. In order to determine cause-and-effect, it is essential to assign

> subjects at random to experimental and control groups (Merriam, 1988, p. 6.).

> Nonexperimental or, as it is often called, descriptive research is undertaken when description and explanation (rather than prediction based on cause and effect) are sought, when it is not possible or feasible to manipulate the potential causes of behavior, and when variables are not easily identified or are too embedded in the phenomenon to be extracted for study. The aim of descriptive research is to examine events or phenomena (Merriam, 1988, p. 7).

Survey research, historical research, and case study are usually considered nonexperiemental methods. Merriam stated four points to help researchers evaluate the nonexperimental forms and provide the best result to their research question. The first point was "the nature of the research question". Survey research answers the "what" and "how many" questions. "How" and "why" questions can be researched with case study and historical formats. Another factor to consider is "the amount of control" needed to conduct the study. "The more control one has, the more experimental the design. The least amount of control characterizes historical research, since no treatment is manipulated and no observations are made" (Merriam, p. 9). The third consideration is "the desired end product". It is linked to the research question. How will the results be presented in the report. Is it the end product of a cause-and-effect study? Does it represent a holistic, intensive description and interpretation of a contemporary phenomenon? Does it identify the scope and reason for certain variables? Or is it a historical analysis? The final point that influences the researcher to select a case study would be the identification of a bounded system. Case study method "is an examination of a specific phenomenon such as a program, an event, a person, a process, an institution, or a social group" (Merriam, p. 9).

Case study design provides qualitative information. Researchers use case study to gain insight, discovery, and interpretation of a situation. Hypothesis may result from case study information. Testing of the proposed hypothesis changes the scope of the research to an experimental format.

Qualitative case studies have four essential properties: they are particularistic, descriptive, heuristic, and inductive. Particularistic refers to the scope of a particular program, event, situation, or phenomenon. The case is significant for the data disclosed and its potential. This scope makes it good for practical problems such as questions, situations, or enigmatic occurrences. The attention is on the way groups confront specific problems.

Descriptive is a another characteristic associated with the case study method. It refers to the "interpreting the meaning of . . . demographic and descriptive data in terms of cultural norms and mores, community values, deep-seated attitudes and notions and the like" (Guba and Lincoln, 1981, p. 119). The findings are usually reported in a literary form and include small amounts of numerical data.

The expanded understanding of a situation is the heuristic characteristic of case study. The reader can gain a new perspective, extend current knowledge, or confirm what is known from reviewing a case study. The remaining characteristic is that case study methods are usually inductive. Hypotheses, concepts, and generalizations are derived from the context of the case.

Merriam examined Olson's "aspects" of case study design and was able to group some of them under three of the four case study characteristics.

Olson's aspects related to case study's particularistic nature were:
- It can suggest to the reader what to do or what not to do in similar situation.
- It can examine a specific instance but illuminate a general problem.
- It may or may not be influenced by the author's bias.

Aspects related to the descriptive nature of case study were:
- It can illustrate the complexities of a situation- the fact that not one but many factors contributed to it.
- It has the advantage of hindsight yet can be relevant in the present.
- It can show the influence of personalities on the issue.
- It can show the influence of the passage of time on the issue -deadlines, change of legislators, cessation of funding, and so on.
- It can spell out the differences of opinion on the issue and suggest how the differences have influenced the result.

Aspects related to the heuristic quality of case study were:
- It can explain the reasons for a problem, the background of a situation, what happened, and why.
- It can explain why an innovation worked or failed to work.
- It can discuss and evaluate alternatives not chosen.
- It can evaluate, summarize, and conclude, thus increasing its potential applicability (Merriam, 1988, pp. 13,14).

Procedure

Many outlines to develop a research case study are listed in literature. Spirer's (1980) format suggests case studies evolve from three stages. Three to six steps are needed for each stage. The stages and steps from Spirer (1980) are:

Pre-Fieldwork Stage

Stage One encompasses six steps that are needed prior to the collection of data. These six steps (Spirer, 1980) are:

Step One	Setting Boundaries
Step Two	Determining the Unit of Analysis
Step Three	Selecting a Site(s)
Step Four	Establishing Initial Contacts

Step Five Developing Data Collection Systems

Step Six Organizing Data

In step one, the boundaries for the study are established. The limitations are established with the needs of the decision-makers incorporated into the study. These needs direct the focus of the study to one or two questions in depth questions or to several questions in less depth. The second step is to identify the "thing" that will be studied. Individuals, types of programs, or institutions are a few of the examples that may be selected for sampling in case study (Spirer. 1980).

The sampling method is decided in the third step, selecting a site(s). Random or purposeful sampling are available for the researcher to use. The fourth step, establishing initial contacts, involves gaining formal permission for the site(s) to participate in the case study. Each candidates for the study should be acquainted with the purpose of the study. Developing data collection procedures, step five, defines the techniques that will be used to gather the actual data. This step also helps to define who or what should be included in the study. Spirer recommends using three types of procedures to verify data. The final step, organizing data, is important to assure the data will be available for analysis. Other points to remember in this step are: the analysis should be cost effective, it is easy to implement, and it is least time consuming (Spirer, 1980).

Fieldwork Stage

The second stage in Spirer's case study methodology is composed of three steps. They are:

Step Seven Staff Training

Step Eight Logistics of Field Operations

Step Nine Data Collection

This case study model was written with a team of individuals working to gather the information. Step seven, training sessions should be held to acquaint or refresh members with the purpose of the study and appropriate techniques. The next step reviews the scheduling, selection of candidates, response recording, and management of study supplies. The ninth step reviews the requirements for a successful interview. Room arrangements and interviewing techniques are critiqued (Spirer, 1980).

Analysis, Verification, and Synthesis Stage

The concluding stage of the case study includes the analysis, verification, and synthesis of the information collected (Spirer, 1980). The three steps needed are:

Step Ten Analyzing Data

Step Eleven Reporting the Findings

Step Twelve Utilizing the Case Study Findings

Step ten is ongoing through the collection of the data. The continued evaluation of the data can confirm or contradict the reports obtained at other sites. The findings can be tested for accuracy by allowing some of the participants to review the findings. The final report should include: evaluation of the purpose, explanation of the methodology used, time and length of the case study, sites, limitations of the case, checks on data, the presentation of the findings, and conclusions and recommendations (Spirer, 1980).

The final step, utilizing the case study findings, is important to keep in mind during the entire case study process. The key factors identified to enhance the probability of using the findings are: who was the information intended, was the report available for the individuals or groups, was the data prepared and organized in an acceptable form, is it possible to summarize the report into a shorter form for interested parties with limited time to read the entire case study (Spirer, 1980).

Limitations

Case studies are time consuming and expensive to undertake. The narrative for a case study is long and detailed. Readers may be discouraged by the volume of the case study. The case study method appears to be easy to conduct but a well planned and executed one requires a large amount of preparation. Case studies are limited by the integrity and sensitivity of the researcher. They are also subjected to the bias of the researcher. The researcher must be skilled in interviewing techniques and able to retrieve and organize data objectively.

CHAPTER III

METHODS AND PROCEDURES

This chapter details the methods and procedures for collecting data relevant to the purpose of the study outlined in Chapter 1. Included are: (1) the introduction to the study, (2) the selection of the subjects, (3) the development of the instrument, (4) collection of the information and (5) the analysis of the data.

Introduction

The nature of this study did not lend itself to a succinct research design. This research design may best described as an emphasis of the descriptive dimension of the case study supplemented be data derived from a non-quantitative research instrument.

The survey was conducted at nine hospitals in Oklahoma. The hospitals selected were accredited with the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), members of the American Hospital Association (AHA) or American Osteopath Hospital Association (AOHA), and Oklahoma Hospital Association (OHA). Membership in these organizations identifies that participating hospitals are striving to provide a safe environment for employees, visitors, and patients. Maintaining accreditation with these groups requires that the institutions constantly evaluate themselves, correct deficiencies and document what was done to solve problems. Teams of voluntary

experienced healthcare professionals are regularly sent to the hospitals to determine if they qualify for accreditation. They also determine the length of the accreditation.

Selection of Subjects

Nine hospitals were selected from the 1989 Oklahoma Hospital Association Directory. Ownership of the hospitals included federal or non-federal government, non-government not for profit, and investor-owned. Each hospital selected was determined to be financially independent from the others in the survey. The researcher wanted to review nine unrelated hospitals and their individual practices and policies.

The hospitals were divided into to three groups according to the number of licensed beds. For this survey large hospitals were identified to have 500 or more licensed beds. Medium sized hospitals had 200 to 499 licensed beds. Hospitals with 199 beds or less were labeled small institutions. The classification of small, medium, and large hospitals was included to determine if the size of the hospital influenced compliance with the proposed bloodborne standard.

The hospital's names, addresses, and specific data were withheld to provide confidentiality. The three large hospitals were identified as A', 'B', 'C', the medium hospitals were 'D', 'E', 'F', and the small hospitals were 'G', 'H', and 'I'. The individuals contacted at the hospitals were selected for their access and knowledge of the content in new employee safety orientation and hepatitis B vaccination programs.

Development of the Instrument

The National Survey of Hepatitis B Vaccine Programs conducted in May 1986 at the 13th Annual Education Convention of the Association for Practitioners in Infection Control was reviewed to help formulate questions for the study. Clifford Weller's article in Textile Rental was studied to formulate questions. Hospital infection control practitioners were consulted for input to develop the questionnaire. The draft of the questionnaire was tested for clarity, content, and time required to complete it by infection control practitioners that would not be participating in the survey. The survey was critiqued and edited. The revised version was mailed to the nine individuals at the selected hospitals.

Collection of the Data

The respondents were selected because they present or were accountable for the new employee bloodborne pathogens safety and hepatitis B programs. The new employee safety survey was mailed to respondents with a cover letter explaining the purpose and thanking them for taking time to answer the questionnaire. A copy of the final report was sent to hospitals returning a completed survey.

Analysis of the Data

A descriptive report was prepared from the survey data. Complied tables were prepared to allow for concise review of the responses. They were organized according to the number of licensed beds for the hospital. The responses were evaluated to the proposed Occupational Exposure to Bloodborne Pathogen Standard. The information gathered was

useful to identify strengths and weaknesses within the programs and to identify possible suggestions to reach compliance with the bloodborne pathogen standard by the time it becomes law.

CHAPTER IV

PRESENTATION OF FINDINGS

The purpose of this chapter is to present the findings of the survey. The sections are presented in the following order: (1) design of the study, (2) demographic information, (3) survey responses, (4) compiled data.

Design of the Study

The previous information described in the review of literature led the researcher to develop a survey for hospital new employee safety orientation and hepatitis B vaccination programs. OSHA's promulgation period for Occupational Exposure to Bloodborne Pathogens allowed time for selected sections of current hospital new employee orientations to be reviewed and determine how closely they met the proposed guideline standard.

In order to establish their present status a standardized instrument was developed and mailed to nine hospitals. The survey was designed to determine:

1. If a formal hospital new employee orientation existed.
2. Identify if a specific safety component was included in the new employee orientation.
3. Ascertain if new employee hepatitis B vaccination policies and practices were a part of new employee orientation.

4. Determine if variances in hospital safety and hepatitis B policies existed and could be attributed to hospital's number of licensed beds.

Demographic Information

The survey group consisted of nine hospitals selected from the 1989 Oklahoma Hospital Association Directory. The directory was reviewed to develop three categories for number of licensed beds. For this case study large hospitals were defined to have over 500 licensed beds. Medium hospitals had 200 - 499 licensed beds. Small hospitals had 199 licensed beds or less. Numerous hospitals could be considered as case study subjects. Ownership of the hospitals included federal or nonfederal government, nongovernment not for profit, and investor-owned.

The hospital's names, addresses, specific number of licensed beds, and representative's names contacted were withheld to provide confidentiality. Large hospital's were identified as 'A', 'B', or 'C', the medium hospitals were 'D', 'E', 'F' and small hospitals were 'G', 'H', and 'I'. The individuals contacted at the survey hospitals were selected for their access and knowledge of the content in the new employee safety orientation and hepatitis B vaccination programs.

Responses

The new employee orientation survey for safety practices was mailed to the nine hospitals in the survey (See Appendix B). All of the surveys were answered and returned.

The institution's representatives were asked to complete the appropriate responses to first 20 questions on the survey. Questions 21

through 24 were open ended to determine possible program difficulties and to request suggestions that would facilitate the hospitals compliance with the proposed bloodborne pathogens standard. The complete complied tables are in Appendix C.

The first question on the survey was designed for the respondents to verify the licensed number of beds for the hospital. The survey was structured to have three large, three medium, and three small hospitals. Nine responses from three large -'A', 'B', 'C', three medium - 'D', 'E', 'F', and three small -'G', 'H', 'I' hospitals were received. Summarized responses to the numbers of licensed beds was noted in Appendix C.

The second question was used to verify that all the hospitals did have a formal new employee orientation program. Orientation programs provide a standardized introduction for new employees to an organization. This type of program generally includes institutional mission statement, philosophy, goals and objectives, historical perspective of the organization, overview of corporate structure, employee services/benefits, policies and practices for the company, review of the type of product(s) produced by the company, and additional related information. It provides the employee with a general introduction to their employer. This is one program that most new employees are required to attend regardless of position within a organization. All nine hospitals had formal new employee orientation programs. These responses were noted in Appendix C.

The third question asked was the frequency new employee orientation was presented. The professional shortages in healthcare industry have created situations where individuals may report to positions or

experience delays due to staffing prior to attending new employee orientation. The frequency of new employee orientation was affected by time required of presenters away from their primary job responsibilities. These items were considered when evaluating the frequency of new employee orientation programs. The responses were divided among the biweekly and once a month schedules. Hospitals 'A', 'B', 'D', and 'H' operated on a biweekly new employee orientation schedule. One hospital 'C' presented the programs on a biweekly for "nursing personnel" and once a month for "non-nursing personnel". Hospital 'F' noted once a month "usually for non-nursing personnel, maybe more if Registered Nurses are hired at frequent times". The once a month schedule was utilized by hospitals 'E' and 'G'. Hospital 'I' provided new employee orientation "as needed - at least once". The recorded responses were found in Appendix C.

The fourth question was included to determine the departments or employees at the survey hospitals that were considered to be moderate to high risk for exposure to bloodborne pathogens. The OSHA proposed bloodborne pathogens standard defined moderate to high risk exposure as "exposure occurring more than once a month". A list of 11 hospital departments was provided. The multiple responses marked by the nine hospitals were condensed in Table I.

The fifth question was included to identify if attendance was documented at each portion of the orientation program. Planned new employee orientation programs are structured to be presented by many individuals. The presenters primary daily job responsibilities can be rearranged to allow them to contribute to the orientation program. The necessary breaks in the program create times when an employee may leave

TABLE I

QUESTION NUMBER FOUR

	HOSPITALS								
	A	B	C	D	E	F	G	H	I
	over 500 beds			200 - 499 beds			199 or fewer beds		
Anesthesiology	X	X	X	X	X	X		X	X
Emergency Room	X	X	X	X	X	X		X	X
Endoscopy		X	X	X	X	X		X	
Housekeeping					X	X			
Laboratory	X	X	X	X	X	X	X	X	X
Laundry									
Nursing	X	X	X	X	X	X*5	*6	*7	X
Outpatient Surgery	X		X	X	X			X	X
Radiology				X					
Respiratory Care				X		X			
Surgery	X	X	X	X	X	X		X	X

Hospital F *5 = "OB" - added comment
Hospital G *6 = "except research and psychiatric areas"
Hospital H *7 = "Labor and Delivery, Oncology"

orientation or be called back to a department. The hospitals indicated that attendance was documented for each portion of their new employee orientation. This data was noted in Appendix C.

The sixth question was designed to ascertain if the hospitals would comply with the bloodborne pathogens standard for a "Safety Component" in orientation programs. All the hospitals indicated that safety sections were included in their programs. The seventh question was unnecessary since all the hospitals had specifically defined safety sections. The responses to these questions were noted in Appendix C.

The eighth question asked if the concept of Universal Precautions or Body Substance Isolation was presented and explained in the safety section. OSHA also required documentation of attendance for each employee to this program. All of hospitals presented Universal Precautions or Body Substance Isolation and had earlier indicated that attendance to each orientation section was recorded. The combined responses were noted in Appendix C.

The ninth question examined identification of moderate to high risk employees in the orientation program. The safety program could include this aspect of employee education or the hospital could choose to present this information at another time. Six of the hospitals did provide this data at orientation. Three institutions indicated that the employee or departments were not identified in the orientation. The specific recorded responses were found in Appendix C.

The tenth question investigated the availability of Hepatitis B vaccine for new employees. OSHA's purposed bloodborne pathogens standard states that Hepatitis B vaccine was to be offered to moderate to high risk employees. All of the survey hospitals replied that new employees were offered Hepatitis B vaccine. These responses were noted in Appendix C. The eleventh question asked if the availability of the vaccine was mentioned in new employee orientation. Eight hospitals did present this information in orientation and the remaining hospital provides that data to the employee during "pre employment screening". Responses were found in Appendix C. The twelfth question asked if the hospital paid for the complete Hepatitis B vaccination series. OSHA's purposed bloodborne pathogens standard stated that the employer should be responsible for providing the vaccine. The purposed standard noted

that OSHA primary responsibility is to provide a safe environment for workers. OSHA's perspective was the employer is responsible to pay for the vaccine. The nine survey hospitals indicated they paid for the complete vaccination series. Compiled responses were found in Appendix C.

Question thirteen asked the hospitals if new moderate to high risk employees were screened with laboratory tests prior to beginning the vaccination series. OSHA's purposed bloodborne pathogens standard required the moderate to high risk employee to be screened with laboratory tests. CDC research suggested that pre-screening was not cost effective. OSHA choose to require pretesting in the regulation. Six of the hospitals indicated that laboratory screening was not utilized. Three of the hospitals did screen moderate to high risk employees. The specific responses were found in Appendix C.

The fourteenth question examined the prevaccination Hepatitis B status and if it was documented in both employee health and administrative records. OSHA purposed bloodborne pathogens standard refocused prevaccination and documentation to accompany it. Four hospitals did document prevaccination status and five indicated negative responses. The compiled responses were found in Appendix C.

The focus of the fifteenth question was the Hepatitis B vaccination requires a series of three or four injections over a six month or year basis depending on the dosing regimen. This program represents a major economic and long term expense. Justification to the employer regarding the completion rate of the vaccination series seven of the survey hospitals document that the new moderate to high risk employee completes the series. One hospital indicated that "not all employees choose to

complete the series. There is an employee noncompliance program nationally." Another hospital indicated that they "check for completion, but voluntary". The remaining hospital provided the employee a "copy of prescription and dates given." The responses were complied in Appendix C.

Question sixteen examined the documentation of post vaccination status of moderate to high risk employee. The purposed bloodborne pathogens standard stated "at this time post-vaccination testing is not considered necessary unless poor response to vaccine is anticipated" (proposed Occupational Exposure to Bloodborne Pathogens Standard, 1989, p. 23052). Four of the survey hospitals document the post vaccination status. Three 'no' responses were noted. One hospital "doesn't check employee can opt screen and pay for it". The other hospital documents "only on occasions". The responses were recorded in Appendix C.

Question seventeen asked if the survey hospitals had a policy for monitoring new moderate to high risk employee that fail to convert to immune status after initial vaccination series. Did the hospitals design their vaccination program to include individuals that would not develop immunity upon completion of the vaccination series? Five affirmative responses were noted. Two hospitals marked 'no'. One respondent noted "I control working on this". The remaining hospital responded "when exposed a HB antibody is done". The responses were noted in Appendix C.

The eighteenth question examined the use of a waiver to document new employees that refused Hepatitis B vaccination. The use of a waiver would help with documentation that the new moderate to high risk employee had been offered the vaccine. Seven of the hospitals utilized

a waiver. One institution "just documented on chart". The remaining hospital is "working on this". Specific responses were found in Appendix C.

Question nineteen was included to determine if the hospitals had developed Hepatitis B vaccine procedures along the models for other forms of vaccination. Plasma derived Hepatitis B vaccine research, 1982, had been slow due to the alternative administration methods, varied recipient populations, dosing regimens, and the fear of contacting AIDS from the vaccine. The yeast derived Hepatitis B vaccine research data since 1986 is being analyzed. Two hospitals noted that they had a policy when booster vaccination would be indicated. Five hospitals indicated they did not have a Hepatitis B vaccination booster policy. One hospital responded " this has yet to be determined". The other hospital noted they were "working on this". The specific responses were found in Appendix C.

The twentieth question was included to gain an idea of the current employee completion rate at the hospitals. Employees that had completed the program could be evaluated to identify strengths and weaknesses of the current program. This information could be used to revise and implement changes in the program. The responses varied from fifteen to ninety percent for completion of the Hepatitis B vaccination series. Two hospitals did not supply responses. One hospital was unsure of their completion rate. The responses were noted in Appendix C.

Question twenty one ask the respondents to list difficulties with current Hepatitis B policies. Two of the hospitals responded with "none". Four institutions did not respond to this question. The three remaining hospitals responses reflected institutional

circumstances that were outside of their area of control. Specific response were recorded in Appendix C.

Question twenty two ask the survey hospitals what could be done to facilitate compliance with their current policies. One hospitals noted "good compliance". Two institutions did not respond. One noted the "employees must assume more responsibility for their health". Two hospitals mentioned more education and inservices, one mentioned education. One of the institutions noted that "if the hospital offers vaccine and it is refused hospital not liable". The other hospital noted increased employee health staff and continued inservices. Compiled responses were listed in Appendix C.

Question 23 asked what difficulties the survey hospitals anticipated in achieving compliance with the proposed bloodborne pathogens standard. Four hospitals did not respond to this question. Three hospitals mentioned the cost of the vaccine for the number of employees OSHA has defined as moderate to high risk. One hospital "hopefully will improve". The remaining hospital noted "all hospital is required is to offer vaccine, how can we force people to comply". Responses were recorded in Appendix C.

The final question ask what could be done to facilitate compliance with future Hepatitis B policies. Four hospitals did not respond to this question. Three institutions noted "education", one also added follow-up and more education. One respondent noted "support from department directors and more money". The remaining hospital noted they were "doing follow-up calls, etc." and employee commitment to Hepatitis B prevention since it is on a voluntary basis. These remaining responses were listed in Appendix C.

Compiled Data

The compiled data was evaluated to determine how closely the nine hospitals' new employee safety orientation and hepatitis B vaccination programs met the proposed OSHA guideline for Occupational Exposure to Bloodborne Pathogens. The hospitals were evaluated on the same measurement tool. The survey focused on specified points from the purposed OSHA guidelines governing safety orientation and hepatitis B vaccination. The hospitals were found to be in compliance with the majority of selected items if the purposed format was to become law. The new employee safety orientation responses identified a consistent pattern of agreement. Certain questions related to availability of hepatitis B vaccine for new employees received mixed responses. Points of variation could be modified prior to the effective date. They did not appear to be limited to a particular size of hospital. Some of the differences were directly related to the large expensive employers would encounter if the proposed standard was accepted. Multiple national healthcare organizations have appeared at the OSHA public hearings to voice concerns over the wording, measurements, and long term implications for the proposed standard as it was promulgated.

CHAPTER V

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

The contents of this chapter are divided into five parts. A summary is presented in the first part. Followed by findings, conclusion, recommendations for practice, and recommendations for future research.

Summary

OSHA's primary goal is to provide employees with lifetime working conditions that are safe and healthy. The proposed Occupational Exposure to Bloodborne Pathogens Standard is OSHA's first statute directed toward regulation of the healthcare industry.

The ninety seven page proposed standard detailed bloodborne pathogens risks in work situations. Employees considered moderate to high risk were defined as having one exposure a month. Employer provided protective measures to increase safety and reduce serious consequences from occupational exposures were stated.

The problem addressed in this study was to see if hospitals could meet standards with existing resources. The healthcare industry had been notified OHSA would be promulgating a standard after analysis of the situation.

The research was narrowed to hepatitis B and HIV safety orientation programs for new moderate to high risk employees. The availability of

hepatitis B vaccination was also included. The purpose of this study was to survey nine hospitals in Oklahoma to determine how closely new employee safety orientation and hepatitis B vaccination programs met the proposed OSHA standard. The data was organized according to number of hospital beds, responses identified areas of agreement between the hospitals in the interpretation of the proposed standard. The variations identified were related to the large expense associated with this program. Additional staffing to provide a quality program, expanded, revised, or continuing educational programs for moderate to high risk employee, and the cost to offer vaccination to all defined moderate to high risk employees were noted as difficulties for current and future programs.

Findings

The findings that resulted from the survey are as follows:

1. The hospitals all had formal orientation program with specific safety components.

2. Hepatitis B vaccination was discussed in new employee orientation or during pre-employment screenings.

3. General documentation procedures were in use and could be revised and expanded according to legislative requirements.

4. Variations among the hospitals were related to the expenses involved to establish, implement, and continue this type of extensive program.

5. The number of licensed beds did not categorize current new employee safety orientation and hepatitis B practices and policies.

Conclusion

The conclusion reached from this survey was the nine hospitals should be capable of compiling with these specific points from the proposed regulations when they become mandated.

Recommendations for Practice

General suggestions for practice are:

1. Evaluate current new employee safety orientation programs to determine participants opinions of the current format. Identify the strengths of your program. Implement revisions to overcome weaknesses in the program.

2. Evaluate on the job applications of the information presented in new employment safety orientation over a regular time period. Incorporate this data into performance reviews.

3. Develop a plan to maintain the long term confidential records that are created from this program.

Recommendations for Future Research

Additional research is necessary to assist the individuals responsible for new employee safety orientation and hepatitis B programs to maintain an effective program. Listed below are some possible topics for future research.

1. Repeat the survey with a larger sample of hospitals in other states.

2. Repeat the survey in clinics and physician offices.

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APPENDIXES

APPENDIX A

COVER LETTER

7931 South Yale Avenue
Apt. C
Tulsa, OK 74136-9015
March 1, 1990

Dear :

I would appreciate if you would take five to ten minutes to complete this questionnaire about your institution's Hepatitis B policies. The information will be used to form a composite representing current Oklahoma hospital practices for Hepatitis B education of new employees.

A coded response system is utilized to protect individual institutional confidentiality. Each responding hospital will receive a copy of the final paper. I hope you will find the information useful in preparations for the changes we will all have to make in view of pending legislation.

Should you determine that this survey would be more appropriately answered by someone else from your institution I would appreciate you forwarding it. Enclosed is a stamped, self addressed envelope for returning the questionnaire. Responses are needed by Wednesday, March 14, 1990.

By background, I am a Medical Technologist completing work on a Master's Degree in Occupational and Adult Education. My special area of interest is Hepatitis B education for healthcare workers. My research focuses on Hepatitis B education in the new employee context.

Should you have questions regarding this survey I can be reached at 918-494-1300 (work) or 918-493-6519 (home).

Thank your for your time. I look forward to receiving your response.

Sincerely yours,

Patty L. Wicks, MT(ASCP)

Enclosures (2)

APPENDIX B

SURVEY

NEW EMPLOYEE ORIENTATION SURVEY FOR SAFETY PRACTICES

1. What is the number of licensed beds for the hospital?
   199 beds or fewer _____ 200 to 499 beds _____ over 500 beds _____

2. Do you have a formal new employee orientation program?
   Yes _____ No _____

3. How often is the new employee orientation program presented?
   Once a week _____ Biweekly _____ Once a month _____
   Other (specify) _____

4 Which employees or departments at your hospital are considered **moderate to high** risk for exposure to bloodborne pathogens?

   Anesthesiology _____
   Emergency Room _____
   Endoscopy _____
   Housekeeping _____
   Laboratory _____
   Laundry _____
   Nursing _____
   Outpatient Surgery _____
   Radiology _____
   Respiratory Care _____
   Surgery _____

5 Does the hospital document that new employees attend each portion of the orientation?
   Yes _____ No _____

6 Is there a safety component in the new employee orientation?
   Yes _____ No _____

7 If a safety component is absent, are the new employees informed at orientation of the hospital policies for handling specimens potentially contaminated with bloodborne pathogens?
   Yes _____ No _____

8 Is the hospital policy concerning Universal or Body Substance Isolation precautions presented and explained in new employee orientation?
   Yes _____ No _____

9 Does the orientation identify employees or departments that are considered **moderate to high** risk for exposure to bloodborne pathogens?
   Yes _____ No _____

10 Does the hospital offer Hepatitis B vaccine to **moderate to high** risk new employees?
   Yes _____ No _____

11 Is the availability of Hepatitis B vaccine discussed in new employee orientation?
   Yes _____ No _____

12 Does the hospital pay for the complete Hepatitis B vaccination series?
   Yes _____ No _____

13. **Is screening provided (by laboratory methods) for moderate to high risk new employees prior to beginning vaccination?**
Yes _____ No _____

14 **Is the pre-vaccination Hepatitis B status documented (both in employee health and administrative records) for the moderate to high new risk employees?**
Yes _____ No _____

15. **Is there a policy to document that each new moderate to high risk employee completes the entire series of Hepatitis B vaccinations?**
Yes _____ No _____

16. **Does the hospital document the post vaccination Hepatitis B status of the moderate to high risk new employee?**
Yes _____ No _____

17 **Does the hospital have a policy for monitoring moderate to high risk new employees who fail to convert to immune status after the initial Hepatitis B series**
Yes _____ No _____

18 **Is a waiver utilized to document those employees who refuse the Hepatitis B vaccinations?**
Yes _____ No _____

19. **Does the hospital have a policy that states when a booster vaccination for Hepatitis B is indicated?**
Yes _____ No _____

20 **What percentage of currently employed moderate to high risk employees have completed the vaccination series?** _____%

21. **What difficulties (if any) are you experiencing with your current Hepatitis B policies?**

22 **What can be done to facilitate compliance with your current Hepatitis B policies?**

23 **What difficulties (if any) do you anticipate in achieving compliance with the proposed OSHA Bloodborne Pathogens Standard?** (29 CFR Part 1910, May 30, 1989, p 23042)

24 **What can be done to facilitate compliance with future Hepatitis B policies?**

APPENDIX C

SURVEY RESULTS

TABLE II

SURVEY RESULTS

	HOSPITALS								
	A	B	C	D	E	F	G	H	I
	over 500 beds			200 - 499 beds			199 or fewer beds		
1. NUMBER OF LICENSED BEDS	X	X	X	X	X	X	X	X	X
2. FORMAL NEW EMPLOYEE ORIENTATION PROGRAM									
Yes	X	X	X	X	X	X	X	X	X
No									
3. FREQUENCY NEW EMPLOYEE ORIENTATION PROGRAM PRESENTED									
Once a week									
Biweekly	X	X	*1	X				X	
Once a month			*2		X	*3	X		
Other (specify)									*4

Hospital C *1 = "nursing personnel"
Hospital C *2 = "non-nursing personnel"
Hospital F *3 = "usually for non-nursing personnel, maybe more if Registered Nurses are hired at frequent times"
Hospital I *4 = "As needed - at least once"

TABLE II (Continued)

	HOSPITALS								
	A	B	C	D	E	F	G	H	I
	over 500 beds			200 - 499 beds			199 or fewer beds		
4. EMPLOYEES OR DEPARTMENTS CONSIDERED MODERATE TO HIGH RISK FOR EXPOSURE TO BLOODBORNE PATHOGENS									
Anesthesiology	X	X	X	X	X	X		X	X
Emergency Room	X	X	X	X	X	X		X	X
Endoscopy		X	X	X	X	X		X	
Housekeeping					X	X			
Laboratory	X	X	X	X	X	X	X	X	X
Laundry									
Nursing	X	X	X	X	X	X*5	*6	*7	X
Outpatient Surgery	X		X	X	X			X	X
Radiology				X					
Respiratory Care				X		X			
Surgery	X	X	X	X	X	X		X	X

Hospital F *5 = "OB" - added comment
Hospital G *6 = "except research and psychiatric areas"
Hospital H *7 = "Labor and Delivery, Oncology"

5. DOCUMENT NEW EMPLOYEES ATTEND EACH PORTION OF ORIENTATION									
Yes	X	X	X	X	X	X	X	X	X
No									
6. SAFETY COMPONENT IN NEW EMPLOYEE ORIENTATION									
Yes	X	X	X	X	X	X	X	X	X
No									

7. Question six responses were all yes. No responses to question seven were obtained.

TABLE II (Continued)

		HOSPITALS								
		A	B	C	D	E	F	G	H	I
		over 500 beds			200 - 499 beds			199 or fewer beds		
8.	HOSPITAL POLICY CONCERNING UNIVERSAL OR BODY SUBSTANCE ISOLATION PRESENTED AND EXPLAINED IN NEW EMPLOYEE ORIENTATION									
	Yes	X	X	X	X	X	X	X	X	X
	No									
9.	ORIENTATION PROGRAM IDENTIFY EMPLOYEES OR DEPARTMENTS CONSIDERED MODERATE TO HIGH RISK FOR EXPOSURE TO BLOODBORNE PATHOGENS									
	Yes			X		X	X	X	X	X
	No	X	X		X					
10.	HOSPITAL OFFER HEPATITIS B VACCINE TO MODERATE TO HIGH RISK EMPLOYEES									
	Yes	X	X	X	X	X	X	X	X	X
	No									
11.	AVAILABILITY OF HEPATITIS B VACCINE DISCUSSED IN NEW EMPLOYEE ORIENTATION									
	Yes	X	X	X	X	X	X		X	X
	No							*8		

Hospital G *8 = "on pre-employment screening"

TABLE II (Continued)

		HOSPITALS								
		A	B	C	D	E	F	G	H	I
		over 500 beds			200 - 499 beds			199 or fewer beds		
12.	HOSPITAL PAY FOR THE COMPLETE HEPATITIS B VACCINATION SERIES									
	Yes	X	X	X	X	X	X	X	X	X
	No									
13.	SCREENING (BY LABORATORY METHODS) FOR MODERATE TO HIGH RISK NEW EMPLOYEES PRIOR TO BEGINNING VACCINATION									
	Yes			X	X	X				
	No	X	X				X	X	X	X
14.	PREVACCINATION HEPATITIS B STATUS DOCUMENTED (BOTH IN EMPLOYEE HEALTH AND ADMINISTRATIVE RECORDS) FOR MODERATE TO HIGH RISK EMPLOYEE									
	Yes	X		X	X	X				
	No		X				*9	X	*10	X

Hospital F *9 = "only if known"
Hospital H *10 = "N/A"

TABLE II (Continued)

	HOSPITALS								
	A	B	C	D	E	F	G	H	I
	over 500 beds			200 - 499 beds			199 or fewer beds		
15. POLICY TO DOCUMENT EACH NEW MODERATE TO HIGH RISK EMPLOYEE COMPLETES TO ENTIRE SERIES OF HEPATITIS B VACCINATIONS									
Yes	*11	X	X		X	*13	X		X
No				*12				X	
16. DOCUMENTATION OF POST VACCINATION STATUS OF MODERATE TO HIGH RISK EMPLOYEE									
Yes	X		X	X	X				
No		X				*14	*15	X	X

Hospital A *11 = "Not all employees choose to complete the series. There is an employee noncompliance problem nationally."

Hospital D *12 = "check for completion, but voluntary"

Hospital F *13 = "copy of prescription and dates given"

Hospital F *14 = "doesn't check employee can opt screen and pay for it"

Hospital G *15 = "only on occasions"

TABLE II (Continued)

	HOSPITALS								
	A	B	C	D	E	F	G	H	I
	over 500 beds			200 - 499 beds			199 or fewer beds		
17. POLICY FOR MONITORING MODERATE TO HIGH RISK NEW EMPLOYEES THAT FAIL TO CONVERT TO IMMUNE STATUS AFTER INITIAL HEPATITIS B VACCINATION SERIES									
Yes	X		X	X		X	X		
No		X			*16			*17	X
18. WAIVER UTILIZED TO DOCUMENT NEW EMPLOYEES REFUSING HEPATITIS B VACCINATION									
Yes	X	X	X	X	X		*19	X	X
No					*18				
19. HOSPITAL POLICY THAT STATES WHEN A BOOSTER VACCINATION FOR HEPATITIS B IS INDICATED									
Yes				X				X	
No	*20	X	X		X	*21	X		X

Hospital A *20 = "this has yet to be determined"
Hospital F *21 = "working on this"

Hospital F *16 = "I control working on this"
Hospital H *17 = "when exposed a HB antibody is done"

Hospital F *18 = "working on this"
Hospital G *19 = "just documented on chart"

TABLE II (Continued)

	HOSPITALS								
	A	B	C	D	E	F	G	H	I
	over 500 beds			200 - 499 beds			199 or fewer beds		
20. PERCENTAGE OF CURRENTLY EMPLOYED MODERATE TO HIGH RISK HAVE COMPLETED THE VACCINATION SERIES	37%	85%	---	?	70%	15%	---	80%	90%

21. What difficulties (if any) with <u>current</u> Hepatitis B policies?
    Responses
    - Hospital A - "not all employee choose to complete the series"
    - Hospital B - "None"
    - Hospital C - no response
    - Hospital D - "Uncertain about number who have completed vaccine. Some vaccine failures. Want to achieve higher vaccination levels. Need better staffing in Employee Health to monitor compliance."
    - Hospital E - no response
    - Hospital F - "Wanted to do study when program started. We are in the process of two year checking for antibodies in those who have finished series - 20%."
    - Hospital G - no response
    - Hospital H - "None, an updated policy went into effect March 1"
    - Hospital I - no response

22. What can be done to facilitate compliance with your <u>current</u> Hepatitis B policies?
    Responses
    - Hospital A - "Employees must assume more responsibility for their health."
    - Hospital B - "Good compliance"
    - Hospital C - "Education"
    - Hospital D - "Increased staffing in Employee Health - continued inservice (often increased in numbers requesting vaccine following inservices)."
    - Hospital E - no response
    - Hospital F - "If the hospital offers vaccine and it is refused hospital not liable."
    - Hospital G - "Education, many, many inservices, newsletter, reminder"
    - Hospital I - no response

23. What difficulties (if any) do you anticipate in achieving compliance with the proposed OSHA Bloodborne Pathogens Standard (29 CFR Part 1910, May 30, 1989, p. 23042)?

Responses

Hospital A - "Hopefully will improve."
Hospital B - "It is unrealistic in terms of employees they consider high risk and is expensive."
Hospital C - no response
Hospital D - "Handling cost of vaccinating all employees exposed at least once a month."
Hospital E - no response
Hospital F - "All hospital is required is to offer vaccine, how can we force people to comply?"
Hospital G - no response
Hospital H - "If all employee who come in contact with bloodborne pathogens particularly HB, are to be vaccinated at hospital expense, the cost of the vaccine, otherwise all barriers are in place.
Hospital I - no response

24. What can be done to facilitate compliance with future Hepatitis B policies?

Responses

Hospital A - "We are doing follow-up calls, etc.. Until employees are committed to Hepatitis B prevention there will be poor compliance because our program is on a 'voluntary' basis."
Hospital B - no response
Hospital C - "education"
Hospital D - "Support from department directors. More money."
Hospital E - no response
Hospital F - "Education??"
Hospital G - no response
Hospital H - "Education and follow-up and more Education"
Hospital I - no response

VITA

Patricia Lee Wicks

Candidate for the Degree of

Master of Science

Thesis: COMPARING HOSPITAL NEW EMPLOYEE SAFETY ORIENTATION AND HEPATITIS B VACCINATION PROGRAMS TO THE PROPOSED STANDARD FOR OCCUPATIONAL EXPOSURE TO BLOODBORNE PATHOGENS

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